The Playa Vista Offsite Drainage System: Original Engineering Intent vs. the "Freshwater Marsh" Narrative

Executive Summary

The excavated basin and channel system now marketed as the "Ballona Freshwater Marsh" was not conceived first and foremost as a habitat restoration project. The engineering record, permit history, and developer testimony consistently show that Playa Capital (and its predecessor Maguire Thomas Partners/MTP) needed the system primarily to solve three hard infrastructure problems: (1) draining stormwater and surface runoff from the massive upland development in Area D; (2) managing and discharging accumulated groundwater — some of it contaminated from the former Hughes Aerospace operations — away from building foundations and underground structures; and (3) maintaining a controlled, permitted outlet to the Ballona Flood Control Channel. The "habitat" and "restoration" language was layered on afterward through litigation settlement obligations, regulatory negotiations, and public relations — and that framing ultimately shaped the project's permits and its popular identity. Understanding the gap between the original drainage engineering purpose and the restoration narrative is essential to evaluating ongoing disputes about how the system has been operated, whether it has served wetland interests at all, and how future management should proceed.

The Development Infrastructure Problem

The Playa Vista site, stretching across what had been the Howard Hughes Aircraft manufacturing campus, presented acute drainage challenges from the start of modern development planning in the mid-1980s and early 1990s. The property sits in a low-lying coastal basin immediately north of Ballona Creek, and the water table is shallow — in places at or very near the surface. Development of residential, commercial, and mixed-use structures, including subterranean parking and foundations, required active and permanent groundwater removal. The former Hughes Aerospace operations had also left soil and groundwater contamination — primarily chlorinated solvents such as trichloroethylene (TCE) — that required a remediation pump-and-treat program. Elevated methane concentrations from both biogenic (wetland) and petrogenicources also complicated any construction below grade.[^1][^2]

Surface runoff was equally demanding. The urbanized watershed that drains into the Playa Vista system eventually grew to encompass approximately 1,040 acres, including 440 acres of the Playa Vista project itself plus over 600 acres of offsite areas to the north and east, including portions of Jefferson Boulevard, Lincoln Boulevard, and the Westchester Bluffs. Without a

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purpose-built receiving basin and a controlled outlet to the Ballona Channel, this impervious surface runoff — along with dry-weather flows — would have flooded the development area and discharged uncontrolled pollutants into the coastal zone.[^3]

The developer's own internal records acknowledged these imperatives. A 2019 presentation to the California Coastal Commission reviewing the permit history is explicit: "Playa Vista knew: it needed to remove groundwater; needed to create flood control systems; knew of Ballona's freshwater ponding and Centinela Creek flow in Ballona." This internal awareness predated any serious public commitment to ecological restoration and reflects the hard engineering calculus that drove the original excavation and channel design.[^1]

The Permit Record: CDP 5-91-463 and the Stormwater Treatment Wetland

The primary permit for what became the Ballona Freshwater Marsh is California Coastal Development Permit No. 5-91-463, issued to Playa Capital Company (or its predecessor Maguire Thomas Partners) in 1991, with its Clean Water Act §404 Army Corps of Engineers counterpart permit. A 1992 EPA/Army Corps informational phase summary report on the Playa Vista project describes Phase I development explicitly as "mixed-use development of a portion of the project's non-coastal zone property and **creation of a stormwater treatment wetland**" (emphasis added). This framing — stormwater treatment, not wetland restoration — is the operative engineering and regulatory description at the time of permit issuance.[^4][^5]

The Los Angeles City Planning Department's CEQA record for the First Phase Project, approved in 1993 and modified in 1995, defined the project scope as including "development of the eastern and western portions of Area D… along with the completion of associated infrastructure improvements (i.e., roads, utilities, etc.); and establishment of a 26.1-acre Freshwater Marsh and a Riparian Corridor". The freshwater marsh is listed among "infrastructure improvements" — not as a standalone ecological restoration initiative. This is a crucial distinction. It establishes that from a city permitting standpoint, the marsh was infrastructure: a basin to collect and treat stormwater and runoff from the development, with an outlet engineered to discharge treated water to the Ballona Channel.[^6]

The Central Storm Drain, described in the Phase II Draft EIR, "runs the entire length of Area D, from the eastern portion of the First Phase project to its terminus at the Freshwater Marsh". All drainage from the proposed project flows to the Freshwater Marsh and ultimately to the Ballona Channel. The Freshwater Marsh thus functions hydraulically as the terminus of the offsite drainage system — a settling and treatment basin positioned between the development's impervious surfaces and the regulated receiving water.[^7]

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What the Engineering Was Actually Designed to Do

The 51.1-acre Ballona Freshwater Wetland System, as documented in post-construction case studies, was officially stated to have three goals: (1) re-establish freshwater habitat lost with the channelization of Ballona and Centinela Creeks; (2) improve the quality of urban runoff into Ballona Creek and Santa Monica Bay; and (3) provide stormwater management and flood control. Even in this official multi-goal framing, stormwater management and flood control appear as co-equal engineering objectives alongside habitat. But the permit and EIR record, and the developer's own engineering memos, suggest that goals two and three — water quality treatment and flood control — were the primary design drivers, with habitat framing added as a regulatory accommodation.[^3]

The system was specifically designed to manage the amount and quality of freshwater flowing into the Ballona Wetlands salt marsh and to enhance the quality of dry-weather and stormwater runoff into Ballona Creek and Santa Monica Bay. The Freshwater Wetland System's hydrologic design consists of:[^3]

- A 2-mile long, 25-acre riparian corridor along a historic Centinela Creek flow line, with a minimum of 1 cubic foot per second of treated groundwater released to maintain freshwater supply
- A 26-acre freshwater marsh connected to the riparian corridor via a box culvert under Lincoln Boulevard
- Two additional storm drain inlets within the freshwater marsh (from Jefferson and Lincoln Boulevards)
- A **primary outlet** to manage water level and control releases into Ballona Creek (Ballona Channel)
- Two secondary outlets (spillway and sluice gate) for freshwater overflow into the adjacent Ballona Wetlands Ecological Reserve[^3]

The primary outlet — a permitted main drain line running directly from the Freshwater Marsh to the Ballona Channel — is the engineering spine of the system. It is the controlled discharge point without which the drainage system could not function. During dry-weather and 1-year storm events, discharges are diverted from the Ballona Wetlands entirely, pass through the Freshwater Marsh for passive treatment, and are then discharged into the Ballona Channel. The system was never intended to continuously hydrate the adjacent natural wetlands; to the contrary, it was designed with flapgates to prevent reverse flow from the Ballona Channel into the marsh during storm events when channel water levels are elevated.[^8][^7][^4]

The Habitat Framing: A Regulatory and Litigation-Driven Overlay

The ecological framing of the project emerged primarily from the 1990 litigation settlement agreement between Friends of Ballona Wetlands, the California Coastal Commission, the State

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Lands Commission, the U.S. Army Corps of Engineers, and Maguire Thomas Partners. That settlement required MTP to downscale development, eliminate development in contiguous wetlands, increase wetland acreage, and pursue full- or mid-tidal salt marsh restoration. The $18 million freshwater marsh and riparian corridor were negotiated as a mitigation obligation — the developer's environmental price of admission for the larger development entitlement.[^9][^5][^1]

As described by the Friends of Ballona Wetlands, the negotiated plan called for a "flood controlling, water quality enhancing natural habitat with public recreation all in one system". The Friends, led by founder Ruth Lansford and then-City Councilwoman Ruth Galanter, advocated for the freshwater marsh as an improvement over baseline conditions — arguing that the system would provide 52 acres of scarce coastal riparian and freshwater marsh habitat for declining species. The California Coastal Commission relied on this language in approving CDP 5-91-463. In other words, the habitat value framing was the political and legal argument made to the Coastal Commission to gain permit approval — not the original engineering motivation.[^10][^1]

Critics within the environmental community recognized this dynamic at the time. Noted wetlands ecologist Joy Zedler, who studied the property, concluded that "the developer failed to make the most of the restoration" and stated that the marsh, given its location and potential, "is a mistake". Santa Monica Baykeeper's Steve Fleischli argued that feeding the preserve with street runoff made it "a dumping ground — a far cry from the restored saltwater marsh that some experts recommended". These critiques capture the essential tension: the system was engineered as a stormwater treatment basin with a controlled drainage outlet, then described publicly as a restored wetland habitat.[^11]

Groundwater Dewatering: The Hidden Primary Function

Beyond stormwater management, the groundwater dewatering function of the system has been a persistent source of controversy and is arguably the most revealing indicator of the developer's original priorities. The Playa Vista site, underlain by a high water table reflecting Ballona's historic freshwater wetland character, required continuous active and passive dewatering to make subterranean construction feasible and to manage contaminated groundwater from the Hughes Aerospace legacy.[^12][^2]

The 2019 Coastal Commission presentation to the CCC explicitly lists the dewatering needs of the project: (1) stormwater surface runoff for flood control; (2) remediation of the Howard Hughes/contamination groundwater; and (3) ongoing management of shallow groundwater associated with the former wetland. An extensive soil and groundwater investigation was performed, contaminated areas were excavated where subterranean parking was planned, and a groundwater remediation program using pump-and-treat with advanced oxidation and granular activated carbon polishing was implemented. The treated groundwater needed somewhere to

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go. The Freshwater Marsh system — and its outlet to the Ballona Channel — provided that discharge pathway.[^13][^2]

The controversy deepened when the Los Angeles Regional Water Quality Control Board denied Playa Vista's request for continued dewatering of clean groundwater to the sanitary sewer system under an NPDES permit, at which point the LARWQCB directed the water instead to the freshwater marsh system. This episode underscores that the primary function being managed was water disposal — not wetland hydrology in any meaningful ecological sense.[^14]

The Unpermitted Drains: Revealing the True Engineering Agenda

Perhaps the clearest evidence of the developer's true engineering intent is the installation of two unpermitted storm drain risers within the Ballona Wetlands Ecological Reserve (Area B) in approximately 1996 — risers that were never authorized under CDP 5-91-463 and were discovered by the California Coastal Commission only in 2013 after a member of the public inquired.[^15][^4]

These drains — 48-inch diameter risers with weep holes, connected via approximately 100-foot lateral lines to the permitted main drain running from the Freshwater Marsh to the Ballona Channel — were installed by Playa Capital Company (or its predecessor Maguire Thomas Partners) at the city's request, according to the developer's own representative. Their location in natural saltmarsh and habitat areas north and south of Culver Boulevard, separated from the Freshwater Marsh by Jefferson Boulevard, placed them entirely outside the boundaries of any approved restoration or mitigation plan. The Coastal Commission was unambiguous: the drains "do not provide any necessary flood protection," they "direct water away from habitat areas within the Ballona Ecological Reserve," and their presence is "clearly detrimental to natural habitat and the wetland that relies on water to function".[^15][^8][^4]

The developer's claimed justification — that the drains were "designed for flood control in large storms for public safety" — was specifically rejected by the Coastal Commission. This claim reveals the institutional reflex to characterize drainage infrastructure as flood control, even when installed without permits in protected wetland reserve areas. The CCC enforcement officer stated plainly that "putting a drain in a wetland is exactly the opposite of anything that you'd do in a wetland".[^16][^15]

The "Controlling Overflows" Admission

One of the most revealing documents in the regulatory record is a letter from Playa Vista representative Marc Huffman to the Los Angeles Regional Water Quality Control Board, in which he describes the freshwater marsh system as designed for "controlling overflows to

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ensure the salt marsh did not receive an excess of freshwater". This language frames the Freshwater Marsh not as a mechanism for delivering freshwater to the adjacent Ballona Wetlands, but rather as a buffer system designed to prevent freshwater from reaching the natural wetland — and to direct it instead to the Ballona Channel.[^16]

Critics, including the Grassroots Coalition, have characterized this framing as resting on an erroneous baseline: the 1990 Settlement Agreement's classification of Ballona as a salt marsh, which they argue was scientifically unsupported and predetermined the system's design logic. If Ballona were understood as the predominantly seasonal freshwater wetland that scientific evidence supports — as many advocate — then the entire engineering premise of the Freshwater Marsh as a protective buffer against "excess freshwater" would be inverted. Under that understanding, the system's primary function becomes even more clearly one of water disposal for development benefit rather than ecological restoration.[^16][^1]

Summary of Engineering vs. Narrative Functions

Function	**Developer's Engineering Priority**	**Public/Regulatory Narrative**
Stormwater collection and treatment	**Primary** — designed as terminus of Area D Central Storm Drain[^7][^3]	Framed as "water quality improvement" for Ballona Creek and Santa Monica Bay
Flood control for development	**Primary** — protects roads, infrastructure, subterranean structures[^17][^18]	Listed as third goal after habitat and water quality in official descriptions
Groundwater and contamination dewatering	**Primary** — continuous need from Hughes Aerospace legacy and high water table[^2][^1]	Rarely mentioned in habitat-focused accounts
Controlled discharge to Ballona Channel	**Primary** — the main drain outlet is the hydraulic spine of the system[^3][^4]	Described as a managed release to protect salinity levels in the adjacent salt marsh
Freshwater habitat creation	**Secondary** — required by litigation settlement; enabled permit approval[^9][^1]	Primary public identity of the site as the "Ballona Freshwater Marsh"

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Function	Developer's Engineering Priority	Public/Regulatory Narrative
Salt marsh or tidal wetland restoration	**Not served** — the system was designed to buffer against freshwater overflow to the adjacent area[^16]	Officially deferred to later phases; never implemented adjacent to the marsh

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Conclusion

The Playa Vista Offsite Drainage System — the excavated basin, riparian corridor, and controlled outlet channel now known as the Ballona Freshwater Marsh — was conceived and engineered primarily to serve the drainage, dewatering, and stormwater management needs of the Playa Vista development. The connection to the Ballona Flood Control Channel via the permitted main drain is not an incidental feature; it is the system's fundamental engineering purpose: a controlled outlet for development runoff that had nowhere else to go without flooding the site or discharging illegally into the coastal zone.

The "freshwater marsh" identity was superimposed on this drainage infrastructure through a process of litigation settlement, regulatory negotiation, and advocacy by environmental groups who saw an opportunity to extract ecological value from an obligatory engineering feature. The California Coastal Commission approved the project based on habitat productivity arguments that the developer's own team had crafted. The ecological outcomes — nesting least bitterns, Virginia rails, improved stormwater effluent quality — are real, but they represent the best achievable result from a constrained system that was engineered first, and reimagined as ecological infrastructure second.

This distinction matters profoundly for the ongoing Ballona Wetlands Restoration Project, because the operational logic of the Freshwater Marsh system — drain toward the Ballona Channel, buffer against freshwater overflow to the reserve — runs directly counter to the ecological logic of restoring freshwater-dependent wetland function to the Ballona Reserve. The developer built what the development needed. The habitat narrative helped get it permitted. These were never the same thing.

References

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